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Date: October 28, 2013
Subject: Public Review Draft (PRD) of *California Water Plan Update 2013*
To: Paul Massera

California Forestry Association would like to offer the following page-specific comments on the PRD. The California Forestry Association (CFA) is made up of the remaining sawmills, veneer mills, many of the wood-fired powerplants, large industrial forest landowners in California, and many of the small non-industrial forest landowners in California.

1 **Volume 1, Chapter 2, Imperative to Invest in Innovation and Infrastructure**

Fundamental Lessons Page 2-7 recognizes the importance of the need for "additional groundwater and surface water storage capacity" but I can't find anywhere in all 3 Volumes any specifics on what and where additional surface storage capacity will be pursued as part of the 2013 Water Plan. It should be a specific chapter in the "Roadmap for Action" section. Just in the east Madera/Fresno County area, there are at least 3 known opportunities including the Temperance Flat Dam – 2.7 million acre feet, Fine Gold Dam – 800,000 acre-ft and Yokohl Valley Dam – 450,000 acre-ft.

Volume 2, Mountain Counties Area Regional Report

2 From Page MC-3, the PRD states:

> "Investment in the watershed and headwaters of the Sierra Nevada and protecting resilient forests are needed to maintain the vitality of the source water supply and overall system for providing adequate water quantity and water quality for the entire state."

CFA suggests this statement needs to be changed to read: "State and Federal Investment in the watershed and headwaters of the National Forests of the Sierra Nevada are needed to dramatically increase the pace and scale called for by the Forest Service Regional Forester in his March 2011 "Region 5 Ecological Restoration Leadership Intent" White Paper.

The Regional Forester has stated that he believes they have 9 million acres of productive forest land that is in need of forest health/fuels reduction treatments over the next 10-15 years. Hence, he's saying they have little or no acres that are "resilient". The total productive forest land available for active management on the national forests totals 9.8 million acres.

3 From Page MC-5, the PRD states:

> "In many parts of the [Mountain Counties] area, it is essential for the State to retain and restore ecological health and resilience to this area in order to

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continue realizing the benefits and services it provides, both within the region and the rest of the state."

It would be great to see the State step in and tell the Federal Government that the State (and local counties) is going to take over vegetation management on the National Forests to return them to a healthy and resilient condition. This is the first I've heard of this. Although the State has authority to do so, since the Federal Government only has a "proprietorship" on the national forests, I don't think the State plans to take over management of the National Forests.

Volume 3, Forest Management, Chapter 23

4 From Chapter 23, Forest Management on page 23-4, the PRD states:

> "**Effects of Forest Management on Water Supply**
> The scientific evidence for relations between forests and water supply, however, has been inconclusive (Dudley and Stolton 2003; Troendle et al. 2007). Research has shown that forests have had a limited role in flood protection and variable effects on total water yields and base flows (Ziemer and Lisle 1998; U.S Department of Agriculture Forest Service 2000; Calder et al. 2007; Moore and Wondzell 2005; National Academy of Sciences 2008)."

CFA believes that the scientific evidence is now well documented for the direct relationship between healthy forests and water supply. Dr. Roger Bales, UC Merced, from instrumentation on the Sierra National Forest, can now predict that "sustained, extensive [mechanical and prescribed fire] treatments in dense Sierra Nevada forests could increase water yield by up to 16%."[1] With annual snowpack storage of 11-15 million acre-feet/year, Dr. Bales work indicates that 1-2 million acre-feet of additional water yield is achievable.

Coupling aggressive increases in mechanical thinning and prescribed burning treatments, the draft plan, pg. 23-6, points out that an aggressive wet meadow restoration plan could yield up to an additional 50,000 to 500,000 acre-feet/year of water storage.

The Forest Service, California Region, Regional Forester, Randy Moore, has stated his objectives in his 2011 Leadership Intent White Paper to his Forest Supervisors. On page 3, over the next 10-15 years, he calls for forest health and fuels reduction treatments on 9 million acres of California's National Forests and restoration of 50 percent of accessible, degraded wet

[1] - Bales, Battles, etal. 2011. "Forests and Water in the Sierra Nevada: Sierra Nevada Watershed Ecosystem Enhancement Project".

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meadows.[2] Hence, the Regional Forester is calling for over 500,000 acres/year of forest health and fuels reduction treatments annually. Today, the Region's accomplishment of mechanical thinning and prescribed burning totals about 150,000 acres/year.

The draft plan, Chapter 23, Forest Management, p. 23-9 states that water yield predictions from forest treatments are highly variable and difficult to measure and that "treatments must remove at least 20 percent of the vegetation to have a measurable effect on streamflow (Troendle et al. 2007."

The Forest Service, California Region, westcore datatables[3] show that on productive forest lands available for active management, California's National Forests today have on average 266 trees/acre on a landscape that can generally only sustain 40-100 trees/acre to be resistant to insects, disease and wildfire. These tables also show that the average volume per acre is 15.3 thousand board feet per acre (mbf). On average the Forest Service mechanical thinning projects are doing about 60,000 acres/year and are removing about 5 mbf/acre (33 percent removal) followed by an underburn that consumes much of the remaining small trees and brush. Hence, the forest health and fuels reduction treatments being performed will have a measurable effect if the pace is dramatically increased.

5 **Wildfire Impacts on Watershed Resources (Forest Management, Chp. 23, pages 23-9 through 23-13).**

The draft Plan should indicate the current situation for occurrence, size, and intensity of wildfires on California's forests, particularly the national forests.
Since 1950, the number of wildfires has been steadily increasing. Since the mid 1980's, study by Safford and Miller show the size and intensity is also increasing. The high severity burned acres in wildfires is now approaching 33% of all acres burned[4] in ponderosa pine, Jeffery pine, and mixed-conifer forests and continues to trend upward. The prediction of continued warming, particularly winter warming, over the remainder of this century will lead to longer, drier summer seasons (fire seasons) because of reduced spring snowpack. Hence, the number, size and intensity of wildfires are expected to continue to increase.
CFA believes the PRD should also note that increasing wildfire suppression costs have increased rapidly over the past 30 years and are not sustainable.

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[2] - Moore. 2011. "Region 5 Ecological Restoration Leadership Intent"

[3] - U.S. Forest Service Westcore Area and Volume Data Tables.
http://www.fs.fed.us/r5/rsl/publications/westcore/

[4] - Safford and Miller. – "TRENDS IN WILDFIRE SEVERITY: 1984 TO 2010 IN THE SIERRA NEVADA, MODOC PLATEAU, AND SOUTHERN CASCADES, CALIFORNIA, USA". Fire Ecology Volume 8, Issue 3, 2012
doi: 10.4996/fireecology.0803041.

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CFA believes the Recommendations section (pg. 23-13) should be modified to support the Regional Forester's intent to aggressively increase forest health and fuels reduction projects to treat 9 million acres over the coming 10-15 years and restore 50 percent of the accessible, degraded wet meadows.

6 **Mitigation (Forest Management, Chp. 23, pg. 23-19)**

The PRD states that California's forests are carbon sinks, and thus are an important part of climate change mitigation. The PRD should go on to state that California's national forests are expected to change from carbon sinks to carbon sources by year 2050[5] unless there are aggressive vegetation management treatments to reduce tree density and improve overall forest health.

7 **Vegetation Management & Road Management (Forest Management, Chp. 23, page 23-20)**

The PRD suggests that Unit costs for vegetation management on California's National Forest System lands "range from approximately $1,000 to $2,000 per acre". The draft Plan should go on to point out that the 60,000 acres per year of mechanical thinning is nearly all accomplished through timber sales or integrated resource timber contracts in which the value of the sawtimber removed pays for the service work (removal of small trees and brush). So there's no direct appropriated cost to the Forest Service.

Further, much of the road maintenance and reconstruction work mentioned on page 23-20 under Road Management is also accomplished by Timber Sales and Integrated Resource Timber Contracts with no direct appropriated cost to the Forest Service.

8 **Information Needs, Forest Management Pg. 23-21**

The stream monitoring by Sierra Pacific Industries (SPI) on Battle Creek has been on-going for about 12 years and is one of the most comprehensive research "barometer" streamcourses in northern California. This on-going research has stream instrumentation to measure surface flow, water temperature, and water chemistry 24 hours/day; 7 days/week. Hence, there's a wealth of data available to detect effects of land use.

[5] - Goines, B. and M. Nechodom. 2009. National forest carbon inventory scenarios for the Pacific Southwest Region (California). U.S. Forest Service, Climate Change Interdisciplinary Team. Vallejo, CA. Region 5. Unpublished report. 81 pages.

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9 **Limited Funding for Forest Watershed Restoration, Forest Management, Pg. 23-22**

The rate of progress of restoring degraded wet meadows could be escalated dramatically if the Regional Forester's vegetation management goals are achieved. Through integrated resource timber contracts, net revenue can be used for items such as restoring degraded wet meadows.

10 **Monitoring and Research, Forest Management, Pg. 23-23**

The State should enter into a cooperative agreement and provide monetary support to Sierra Pacific Industries to help pay for the on-going water monitoring that the private landowner has had underway for the past 12 years.

An item should be added for the State to provide monetary support to continued forest water yield research by UC Merced.

Attached are several graphs and photos that the PRD team may find useful.

Thank you for the opportunity to comment.

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Enclosures

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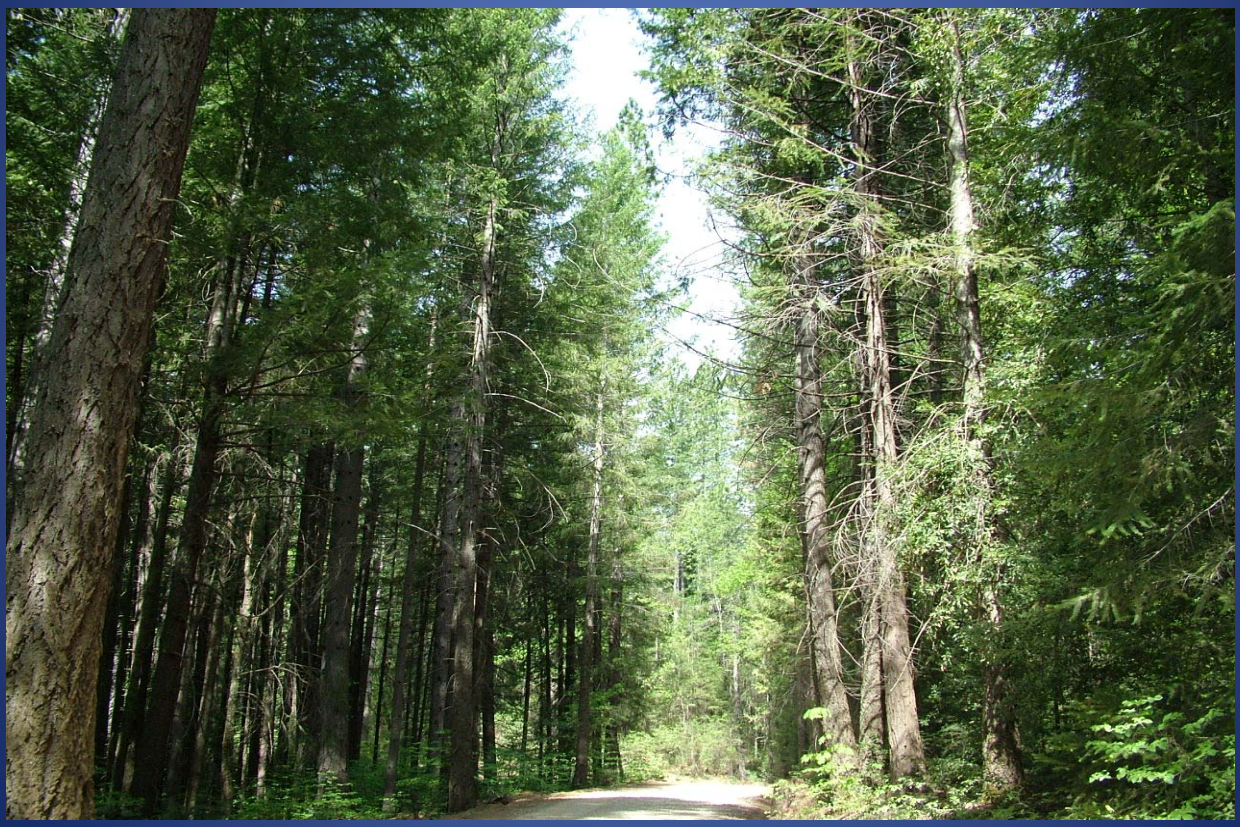
An Unmanaged National Forest Quickly Increases in Density and Becomes At-Risk to Insects, Disease and Wildfire



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CA National Forests average 266 Trees/acre on a landscape that can only support 40-100 trees/acre

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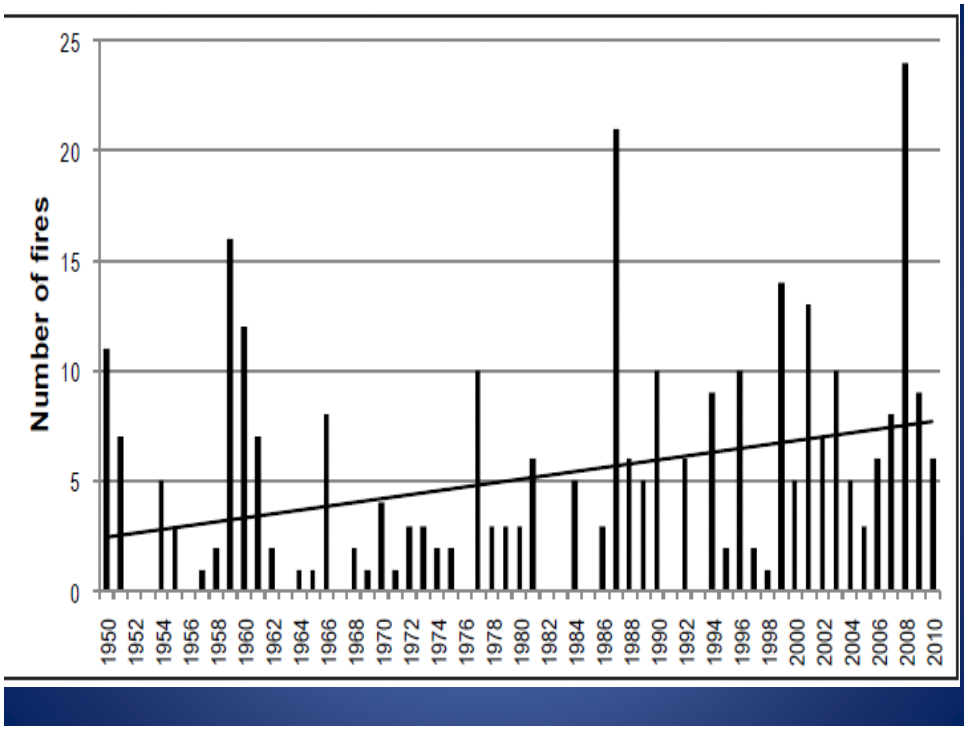

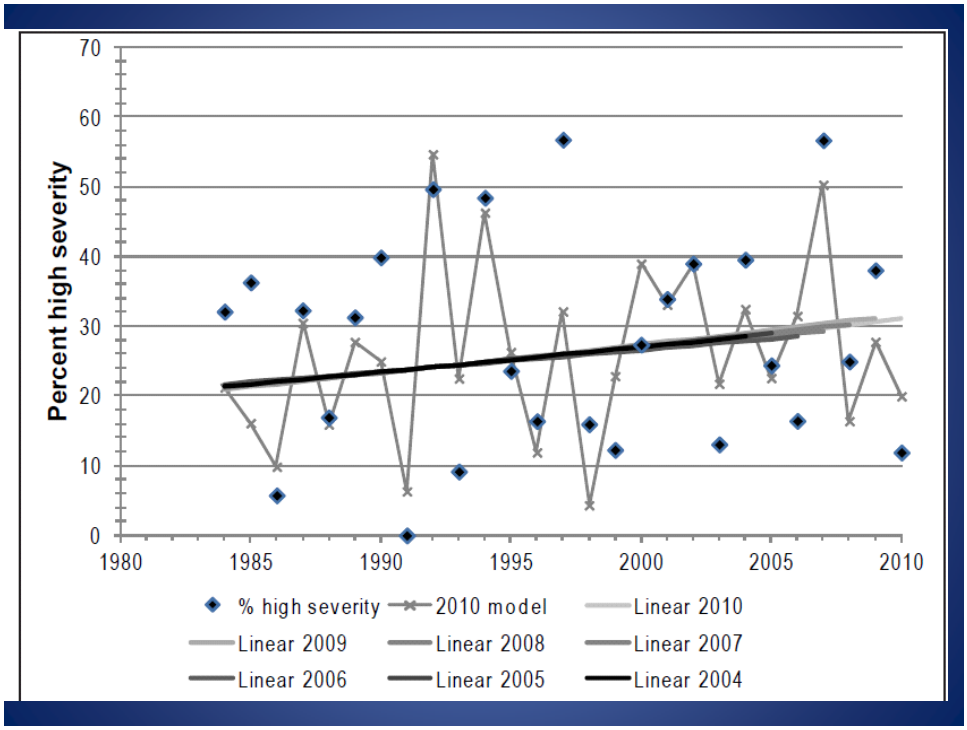

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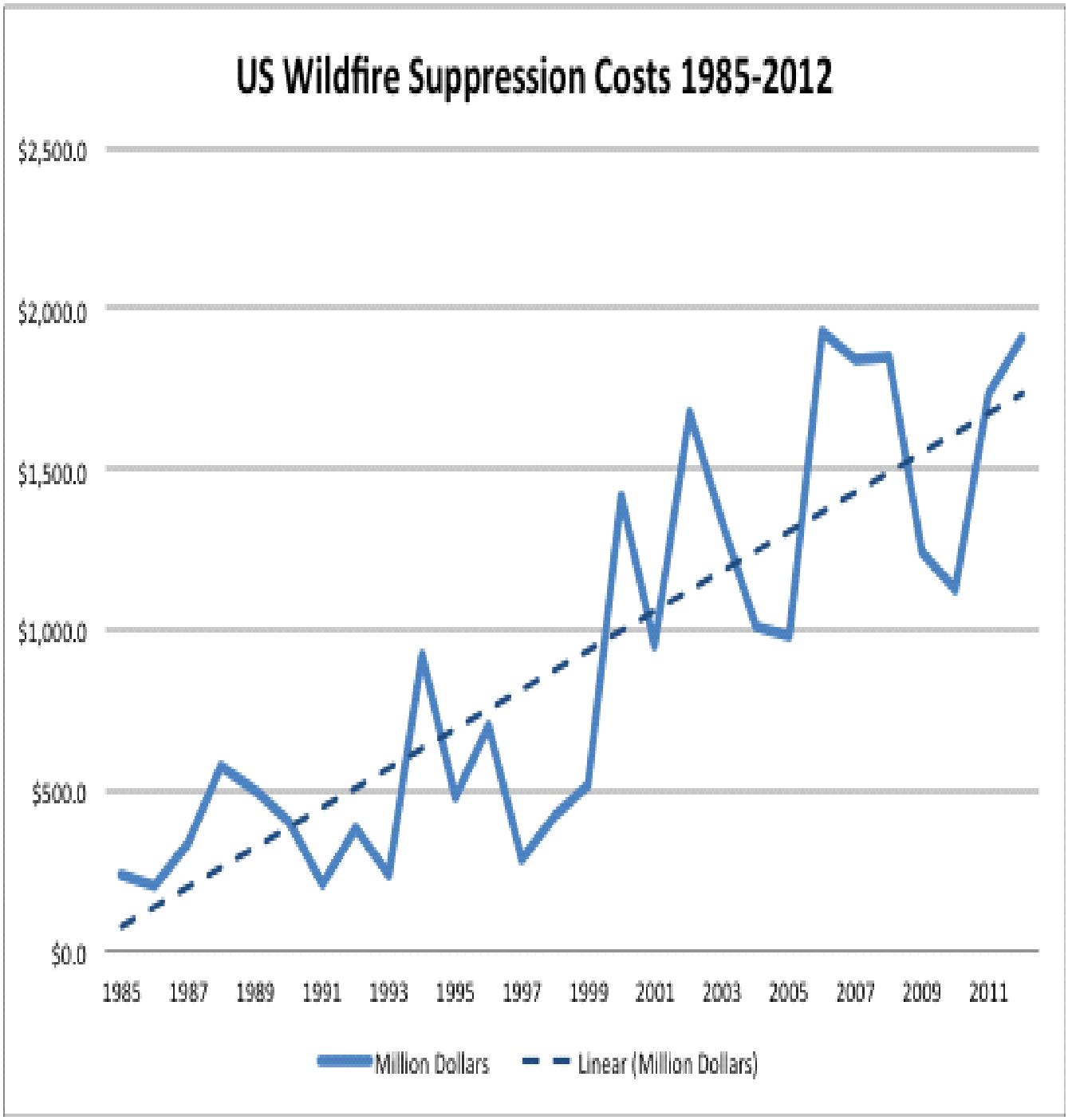

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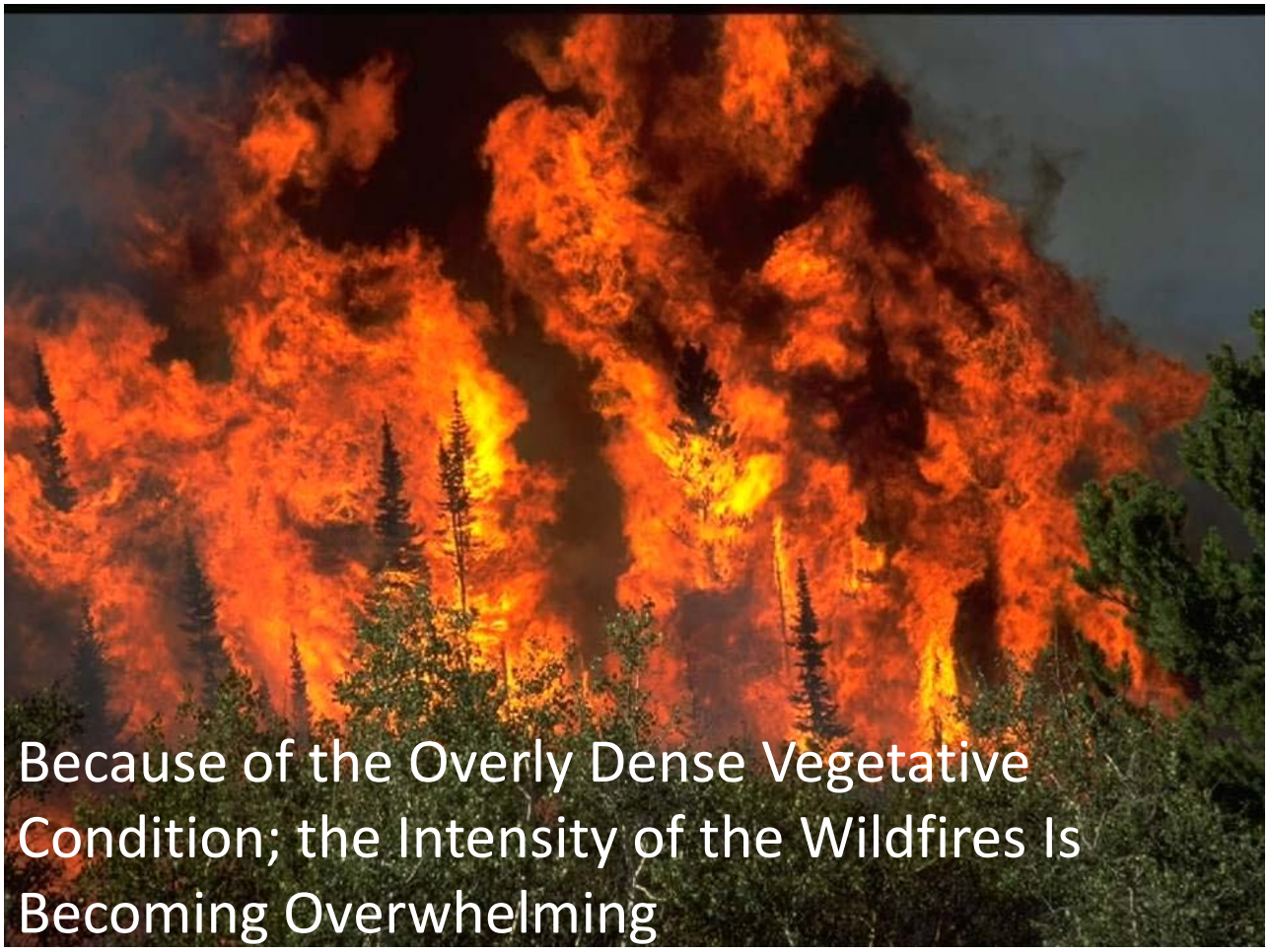

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Wildlife Habitat Suffers

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According to the California Air Resources Board AB32 Scoping Plan Update (Sept. 2013), California Wildfires contribute annually 50% of the Black Carbon released into California's atmosphere